Math
Grade 4

PLD	Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
		The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
Operations and Algebraic Thinking					
Detailed	4.OA.A [1 to 3.1]	Recognizes that any two factors and their product can be read as a comparison. Solves word problems involving multiplicative comparison (where the unknown is the product or quotient), given visual representations. Solves multi-step word problems using the four operations with simple context and scaffolding, where the final answer is the unknown. Solves a counting problem with two attributes using a visual representation.	Represents comparisons of two factors and their product as equations using supports. Solve word problems involving multiplicative comparison (where the unknown is in a variety of positions), given visual representations. Solves multi-step word problems (which may include interpreting remainders) using the four operations with simple context and scaffolding, where the final answer is the unknown. Creates and uses any visual representation of a counting problem with two attributes.	Represents comparisons of two factors and their product as equations without support. Solves word problems involving multiplicative comparison, where the unknown is in a variety of positions. Solves multi-step word problems (including interpreting remainders) using the four operations. The unknown is in a variety of positions and can be represented by a symbol or letter. Recognizes the reasonableness of answers using mental computation and estimation strategies. Creates and uses any representation of counting problems; analyzes simple	Recognizes that any two factors and their product can be read as a comparison; uses multiple strategies and creates his or her own to represent and describe those comparisons. Creates own context for multiplicative comparison. Solves complex multi-step word problems with multiple possible solutions and determines which would be the most reasonable based upon given criteria. Analyzes relationships between any two representations of a counting problem and makes connections to the multiplication principle.

				relationships between counting problem representations.	
Detailed	4.OA.B [4]	Finds factor pairs for a multiple of 10. Determines whether a whole number in the range of 1 to 25 is prime or composite, given visual representations.	Finds factor pairs for any whole number. Determines whether a whole number in the range of 1 to 50 is prime or composite, given visual representations.	Recognizes that a whole number is a multiple of each of its factors and determines a given whole number in the range of 1 to 100 is a multiple of a given single-digit number. Determines whether a whole number in the range of 1 to 100 is prime or composite.	Applies the concepts of both factors and prime and composite numbers in problem-solving contexts.
Detailed	4.OA.C [5]	Generates a number or shape pattern that follows a given rule, using visual models.	Generates a number or shape pattern that follows a given rule.	Generates a number or shape pattern that follows a given rule; identifies apparent features that are not explicit in the rule.	Generates a number or shape pattern that combines two operations for a given rule.

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Number and Operations in Base Ten					
Detailed	4.NBT.A [1 to 3]	With numbers within 10,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	With numbers within 100,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	With numbers within 1,000,000, recognizes that a digit in one place represents 10 times as much as it represents in the place to its right, reads and writes multi-digit whole numbers in a variety of forms, and uses place value understanding to round multi-digit whole numbers.	Uses place value strategies, comparisons of two numbers, and rounding in a real-world context.
Detailed	4.NBT.B [4 to 6]	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm without regrouping. Finds products of a whole number (of up to three digits) by a single-digit whole number and whole number quotients and remainders (with up to double-digit dividends and single-digit divisors).	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm with supports. Finds products of a whole number (of up to four digits) by a single-digit whole number and whole number quotients and remainders (with up to three-digit dividends and single-digit divisors).	Fluently adds and subtracts multi-digit whole numbers using the standard algorithm. Finds products of a whole number (of up to four digits) by a single-digit whole number or two double-digit numbers and whole number quotients and remainders (with up to four-digit dividends and single-digit divisors) in context. Illustrates and explains calculations by using equations, rectangular arrays, and/or area models.	Recognizes and identifies an error in an addition or subtraction and shows the correct answer. Interprets a multiplication or division context and explains strategies used to solve. Fluently adds and subtracts multidigit whole numbers using the standard algorithm.

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Number and Operations - Fractions					
Detailed	4.NF.A [1 to 2]	Uses area fraction models to represent equivalent fractions by partitioning unit fraction pieces into smaller equal pieces. Uses a visual fraction model to compare two fractions with different numerators and different denominators.	Uses area fraction models to represent equivalent fractions by partitioning unit fraction pieces into smaller pieces (and understands that this is the same), and multiplies by 1 represented as a fraction.	Uses area fraction models and double number lines to generate and explain why fraction a/b is equivalent to a fraction (n x a)/(n x b), where n is a non-negative whole number. Compares two fractions with different numerators and different denominators and justifies answers using visual fraction models.	Uses a variety of strategies to generate and explain why fraction a/b is equivalent to a fraction (n x a)/(n x b), where n is a non-negative whole number. Extends understanding to compare and order fractions with different numerators and different denominators.
Detailed	4.NF.B [3]	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole with or without context using visual or manipulative models, with no or a simple context. Converts mixed numbers to equivalent fractions.	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole using visual or manipulative models, with no or a simple context. Decomposes a fraction into a sum of fractions with the same denominator and records the decomposition using an equation. Converts mixed numbers into equivalent fractions and adds and subtracts	Adds and subtracts fractions with like denominators by joining and separating parts referring to the same whole, with or without context. Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.	Adds and subtracts more than 2 fractions with like denominators by joining and separating parts referring to the same whole, with or without context. Decomposes a fraction into a sum of fractions with the same denominator in multiple ways and records the decomposition using an equation.

			them.		
Detailed	4.NF.B [4]	Understands a fraction a/b as a multiple of 1/b by using visual fraction models.	Understands a fraction a/b as a multiple of 1/b, and uses this understanding to multiply a fraction by a whole number, using visual fraction model.	Understands and solves simple word problems by recognizing that fraction a/b is a multiple of 1/b, and uses that construct to multiply a fraction by a whole number (in general, n x a/b is (n x a)/b).	Understands and solves more complex word problems by recognizing that fraction a/b is a multiple of 1/b, and uses that construct to multiply a fraction by a whole number (in general, n x a/b is (n x a)/b).
Detailed	4.NF.C [5 to 7]	Expresses a fraction with denominator 10 as an equivalent fraction with denominator 100 by using a model. Uses decimal notation for fractions with a denominator of 10, with supports. Compares two decimals with the same number of places (tenths or hundredths) using supports.	Adds two fractions with respective denominators 10 and 100 by first finding equivalent fractions with like denominators by using a model. Uses decimal notation for fractions with denominators of 10 or 100, with supports. Compares two decimals to the hundredth by reasoning about their size using models.	Adds two fractions with respective denominators 10 and 100 by first finding equivalent fractions with like denominators. Uses decimal notation for fractions with denominators of 10 or 100. Compares two decimals in the tenths and the hundredths (using <, >, and =) by reasoning about their size and records the result of the comparison using the correct symbols.	Solves missing addend problems with respective denominators 10 and 100 by first finding equivalent fractions with like denominators. Demonstrates knowledge of decimal notation for fractions with denominators of 10 or 100 by converting a number with decimal notation to a decimal fraction. Orders decimal set composed of tenths and hundredths by reasoning about their size. Recognizes that the decimals must refer to the same whole.

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Measurement and Data					
Detailed	4.MD.A [1 to 3]	Knows relative size of measurement units, within one system of units. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time and money), including problems involving whole numbers, using supports. Applies the area and perimeter formulas when given all side measurements, using supports.	Expresses measurements in a larger unit in terms of a smaller unit, within a single system, using supports and adjacent units. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time and money, area, and perimeter), including problems involving simple fractions or decimals, using supports.	Expresses measurements in a larger unit in terms of a variety of smaller units, within a single system, and records that data in a two-column table. Uses the four operations to solve word problems (involving distance, liquid volumes, masses of objects, intervals of time and money), including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represents measurement quantities using diagrams. Applies the area and perimeter formulas for rectangles in real-world and mathematical problems, including those where the area/perimeter and one factor (length or width) are known.	Given a context, determines the appropriate unit needed and expresses the measurement to the level of accuracy needed. Uses the four operations to solve multi-step word problems (involving distance, liquid volumes, masses of objects, intervals of time and money), including problems involving fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represents measurement quantities using diagrams. Applies the area and perimeter formulas for rectilinear shapes in real-world and mathematical problems.
Detailed	4.MD.B [4]	Makes a line plot to	Makes a line plot to	Makes a line plot to	Uses data in a line plot

		display a data set of measurements in fractions of a unit (with like denominators of 2 or 4).	display a data set of measurements in fractions of a unit (with like denominators of 2 or 4), and uses addition and subtraction of fractions to solve problems involving information in the line plot.	display a data set of measurements in fractions of a unit (with like denominators limited to 2, 4 and 8), and uses addition and subtraction of fractions to solve problems involving information in the line plot.	to solve a multi-step word problem.
Detailed	4.MD.C [5 to 7]	Measures benchmark angles. Recognizes that angle measure is additive. Solves addition real-world mathematical problems to find unknown angles on a diagram with no more than two angles, within a 90-degree angle.	Understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Solves addition and subtraction real-world mathematical problems to find unknown angles on a diagram with no more than two angles, within a 180-degree angle.	Understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Sketches angles of specific measure. Solves addition and subtraction real-world mathematical problems to find unknown angles on a diagram.	Recognizes how angles are formed, understands that angles are measured in reference to a circle, and can measure angles in whole number degrees using a protractor. Sketches angles of specific measure. Given angle parameters, decomposes into multiple angles and gives the measure of each angle in relationship to the whole.

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Geometry					
Detailed	4.G.A [1 to 3]	Identifies points, lines, line segments, rays, perpendicular and parallel lines, two-dimensional figures, including right triangles, and line-symmetric regular figures; classifies angles (right, acute, obtuse).	Identifies and draws points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Classifies two-dimensional figures based on the presence or absence of parallel or perpendicular lines; identifies triangles. Draws lines of symmetry for regular two-dimensional figures.	Draws points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines; identifies these in two-dimensional figures. Classifies two-dimensional figures based on the presence or absence of angles of specified size. Draws lines of symmetry for any two-dimensional figure.	Creates a two-dimensional shape when given specific attributes, including the presence or absence of parallel or perpendicular lines, the presence or absence of angles of specified size, and particular lines of symmetry.